REQUEST FOR QUALIFICATIONS



Department Of Executive Services
Finance And Business Operations Division

Procurement And Contract Services Section
206-684-1681

Tty Relay: 711

Advertised Date: July 6, 2006

RFQ Title: Supply and Delivery of Polymer for Dewatering Operation

RFQ Number: 06-0810B

Due Date: July 25th, 2006 – 2:00 p.m.

Buyer: Ovita Bonadie, ovita.bonadie@metrokc.gov, 206-684-1055

This is a Two part procurement.

Part One: Request for Qualifications

Part Two by Invitation only:

Invitation to Bid (ITB 06-0810B)

Sealed Intent are hereby solicited and will **Only** be received by:
King County Procurement Services Section
Exchange Building, 8th Floor
821 Second Avenue

Office Hours: 8:00 a.m. - 5:00 p.m.

Monday - Friday

Seattle, WA 98104-1598

BIDDERS MUST COMPLETE AND SIGN THE FORM BELOW (TYPE OR PRINT)

Company Name			
		4	
Address		City / State / Postal Code	
	·		
Authorized Representative / Title	Signature	Phone	Fax
Company Contact / Title	Email	Phone	Fax
		Prompt Payment Discount Terms:	
		C	Days, Net

This Invitation to Bid will be provided in alternative formats such as Braille, large print, audiocassette or computer disk for individuals with disabilities upon request.

Exhibit A - Notification of Intent

To Pre-Qualify for The Supply and Delivery of Polymer for Dewatering Operation

RFQ No: 06-0810B

Openi	ng Date: July 25th, 2006	Time: 2:00p.m.	Buyer: Ovita B	<u>onadie</u>	
Γitle:	Supply and Delivery of Pol	ymer for Dewaterin	g Operations	Phone: <u>206-684-10</u>	<u>055</u>
	Vendor Name:				_
	Address:				_
	Contact Person:				-
	Phone:				-
	Fax No:				-
	Email Address:				_

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SECTION 1 - SPECIFICATION FOR DEWATERING POLYMER

1-1 Introduction

King County ("County") is issuing this Request for Qualifications ("RFQ") to obtain product from manufacturers interested in bidding Polymer for the dewatering operation at the King County Wastewater Treatment Division South Treatment Plant, Seattle, Washington. The qualified manufacturer's product will be named in the bidding document. Bids will be issued by invitation only upon completion of trials.

The King County's South Treatment Plant at Renton desires to enter into a contract for two (2) years supply of polymer for use in its Biosolids Dewatering operation. The two year contract, which may be extended for a maximum of three one year extensions, will result in the procurement of sufficient quantities of polymer to treat approximately **16,000** dry tons of biosolids feed per year.

The County has determined that it is in its best interest to pre-qualify the polymer manufacturers for bidding purposes. Qualified manufacturers who are approved as a result of this pre-qualification process will be those manufacturers which, in the opinion of the County, best meet the requirements set forth in the pre-qualification documents.

While the RFQ is focused on King County's South Treatment Plant, King County reserves the right to utilize the resulting contract at other facilities depending on the business need.

1-2 Time and Place for Submission of Intent to Pre-Qualify

Sealed Notification of Intent shall be submitted by July 25, 2006 at 2:00 p.m. local time to the Procurement Services Division, Exchange Branch Office of King County (hereinafter "County"), 8th Floor, Exchange Building, 821 Second Avenue, Seattle, Washington 98104-1598, for the services described herein. The sealed intent must be received by the County's Procurement Services Division Exchange Branch Office no later than the time and date specified for consideration. The Vendor accepts all risks of late delivery of mailed Intent or of mis-delivery regardless of fault. Intents properly and timely submitted will be publicly opened.

Note: This RFQ is available on the Web at http://www.metrokc.gov/finance/procurement and by choosing the "RFPs, RFQs, ITBs" menu tab, then click the "New" menu tab, then click on "goods & Services", and look for RFQ 06-081OB. Persons who copy the document from the Internet shall inform Ovita Bonadie that they have received the document. If they fail to inform the Buyer, they shall not be notified of Addenda as issued.

1-3 Following General Information is Enclosed

TRIAL INFORMATION (Section 1-4): Outlines prerequisites to be met in order to quality to bid King County's South Treatment Plant at Renton dewatering polymer contract.

BID SPECIFICATIONS (Section 1-5): Product quality, equipment and vendor performance requirements that will be incorporated into the bid document and become part of the contract agreed to and executed between successful Vendor and King County.

DEWATERING POLYMER EVALUATION FORMULA (Section 1-6): Factors comprising the formula and how it is applied to arrive at the best product value to King County.

Note: Actual bid packages will be mailed to qualified vendors upon completion of the pre-qualification process.

1-4 Trial Information

1-4.1 Prequalification Requirements

Vendor will be allowed to perform bench testing up until two (2) weeks prior to the pre-trial. The Vendor will be allowed to trial up to four (4) products during the pre-trial, and up to three (3) trial products during the final trial phases. The Vendor will determine their bench trial method and submit enclosed completed form "Notification of intent to compete" along with the Material Data Safety Sheet (MSDS) on the products (up to three total) that will be used in the final trial one (1) week prior to the final testing. (Faxing of the "Notification of intent to compete" with a letter follow-up, along with the Material Data Safety Sheet (MSDS) to 206-684-2448 (attn: Carol Nelson) is acceptable.) The MSDS sheets for each trial product shall also be emailed to scott.drennen@metrokc.gov at least one week prior to final testing

Trial testing will take place on Tuesday, Wednesday, and Thursday of the weeks selected. Control trial testing will be conducted on these days on the alternate centrifuge

Bench testing, if desired, must be scheduled with Scott Drennen, South Plant Dewatering Lead Operator, at 206-684-2461, Monday through Friday, to check on availability of bench space.

Certificate of Analysis of the product to be trialed needs to be submitted before the testing. This information will be used to calculate active lbs. of polymer applied.

The Vendor is responsible for all the material, transportation cost involved in the bench, pre-trial and final trials. The Vendor is also responsible for disposal of all containers and unused product resulting from the trial. If the Vendor fails to provide disposal after the trail, any material not removed after thirty (30) days will be shipped back to Vendor at Vendor expense.

Liquid polymer will be shipped in 55 gallon drums or 2500 lb. totes for the pre-trial and in 2500 lb. totes for the trial testing. Dry polymer shall be shipped in 55-lb bags.

Shipments of Vendor bench or trial product will be accepted between the hours of 0730-11:30 a.m. and 12:30-15:30 p.m., Monday through Thursday. No weekend or off-hour deliveries will be accepted without prior approval. Prior approval can be sought by calling the shift supervisor at 206-684-2404 and is not guaranteed.

Shipping address:

Dewatering Building South Treatment Plant 1200 Monster Rd SW Renton, WA 98055

1-5 Bid Specifications

1-5.1 <u>Scope</u>

This contract calls for the supply and delivery of dewatering polymer to King County's South Treatment Plant at Renton.

1-5.2 Product Qualification

The bidder must be the manufacturer of the polymer(s) or the sole authorized manufacturer's representative. Proof of manufacturing and, in the case of authorized manufacturer's representative, a letter from the manufacturer' attesting that the vendor is the sole authorized manufacturer's representative, shall be supplied prior to the pre-qualification. It will be necessary for all interested manufacturers and/or the manufacturer's representatives to qualify

prior to a bid solicitation. The qualification process is a three -step process involving bench testing, pre-trials and final trials. Bidding on contracts will be restricted to those companies that participate in the qualification process and qualified products that meet minimum performance specifications.

Manufacturers whose product(s) qualify for final trials are required to submit MSDS and product specifications for each product to be tested prior to ordering of the polymers for such trials. Product specifications may include, but not be limited to, percent active polymer, percent solids and viscosity specification for the neat material as well as procedures for determining these parameters. The submitted specifications will become part of the contract for the successful bid product and will be treated as the proprietary information of the vendor.

1-5.3 Product Disqualification

King County reserves the right to disqualify any polymer prior to trials, or at anytime thereafter, if it is determined that the product poses a safety or health hazard to plant personnel.

King County reserves the right to disqualify any polymer during the trials that causes the biosolids to exhibit unacceptable slurrying or application characteristics.

King County reserves the right to disqualify any polymer that poses an odor problem either at the plant site or at the biosolids reuse sites. King county plant and biosolids application personnel will determine the existence of an odor problem with the polymer.

1-5.4 Quantity

Contract quantity estimates have been determined by pre-qualification trials and these values have been assigned to each product tested. The quantities will be used for bidding purposes only. Final contract quantities will be determined by actual conditions and may vary from the values estimated during the pre-qualification trials. King County's South Plant is expected to dewater approximately 16,000 dry tons of anaerobically digested sludge annually.

1-5.5 Quality

Product specifications for active polymer content and bulk viscosity range that were submitted by the Vendor shall be considered part of the Contract and the Vendor will be bound by them. The vendor shall follow the same analytical procedures as the King County's laboratory to determine the percent activity of the selected polymer.

The vendors are advised to note the difference between the terms **percent activity** and **total solids**. **Percent activity** describes the polymer content of a certain polymer solution whereas the **total solids of a polymer** may include inert contents such as dispersing agents or surfactants. The procedures for liquid (mannich), dry and emulsion polymer analyses will be according to the WERF's (Water Environment Research Foundation) 'Guidance Manual for Polymer Selection in Wastewater Treatment Plants'. The procedures are listed in above referred Manual's Section 3, Module-J.

Each bulk delivery shall be accompanied by the Vendor's Lab certificate of analysis for active polymer content (for emulsion, dispersion, and dry polymers) and bulk viscosity (for emulsion, and dispersion polymers). If the deliveries are determined to be below specification, King County reserves the right to either reject the shipment, or be appropriately credited by the Vendor for the discrepancy. If liquid deliveries are not within the viscosity specification, King County reserves the right to reject the polymer shipment for return to the Vendor at the Vendor's expense.

The Vendor shall supply the heavy load weight slip (before delivery) and the light load weight slip (after the delivery). King County will be billed according to this difference to ensure that the payment is made only for the amount that was actually delivered, and not for what was shipped.

If, at any time during the term of the Contract, the polymer is found to be consistently out of product specifications, King County will notify the Vendor in writing of the problem and will request remedial action within one week from date of notification. King County reserves the right to terminate the contract for noncompliance if the problem is not corrected promptly after this notification.

For this trial at the South Treatment Plant, King County will only evaluate emulsion polymer or dry polymer. No other products, such as mannich polymer, will be considered for this trial.

1-5.6 Performance

Throughout the life of the Contract, King County expects to obtain on-going performance consistent with the performance standard established during the trials. In other words, King County expects that the cake concentrations and polymer dosage rates, when entered in the polymer evaluation formula shall result in a similar value as was calculated as part of the bid process.

If, during the life of the Contract, the product does not produce values within ten percent (10%) of the appropriate standard when tested, King County reserves the right to terminate the Contract. Prior to this action, the vendor will be offered the opportunity to assist King County staff to make suggestions for improving product performance, or by changing products. All remedial action taken by the Vendor will be subject to prior approval by King County staff, and will result in no additional cost to the County.

If an odor problem occurs during the Contract period, as determined by King County staff, the Vendor will be given the opportunity in investigate the problem and to offer solutions.

If the Vendor is unable to offer a solution satisfactory to King County, then King County reserves the right to switch to alternative polymer from the current or other vendor if the problem is temporary, or terminate the Contract. All costs pertaining to correcting the odor or performance problem will be paid by the Vendor as outlined above.

1-5.7 Equipment

King County's existing dewatering polymer storage and batching system is capable of handling dry and liquid emulsion polymers.

All bids for the supply of polymer products that would require the use of additional equipment must include a submittal detailing the additional equipment proposed and a sketch indicating the location in the process stream. Any equipment proposed by the vendor is subject to determination by King County staff as to the suitability and reliability in performing its function and to its adaptability to the existing system.

Should it be determined after the Contract that additional equipment is necessary to utilize the polymer product being supplied by the Vendor the Vendor shall then provide and install this equipment at no additional cost to the County, subject to King County's approval as previously described. Such equipment will become the property of King County. Should the Vendor fail to provide suitable necessary equipment, King County reserves the right to cancel the Contract. King County's South Treatment Plant has four bulk storage tanks that are used for liquid or emulsion polymer storage, approximately 32,000 gallons total. Additional storage tankage and ancillary equipment required must be supplied by the vendor to provide adequate standby capacity to ensure two-week polymer storage beyond the anticipated maximum delivery time.

1-5.8 Delivery

Delivery under this contract will be dependent on the type of polymer being provided by the Vendor. All deliveries will be via motor freight as no railroad unloading facilities are available. All freight and delivery charges will be the responsibility of the Vendor. All liquid polymer product deliveries are to be unloaded and transferred to King County's storage vessels by the carrier's on board equipment. No pressurized air will be available from King County for unloading purposes. Preferred hours for receiving deliveries are 0830 – 1500 hours and 1800 – 2000 hours, seven (7) days a week. However, deliveries can be received outside these hours under exceptional situations. The vendor shall inform South Plant staff at least six (6) hours in advance of any delivery that may fall outside the range of preferred hours of delivery.

The polymer vendor of the Delivery Company will notify King County at least 24 hours prior to any attempt to delivery any product of material.

For liquid polymer solutions with percentage active solids of less than 20 percent, King County will accept delivery of approximately 5,000 gallons truckloads. No containerized shipments will be accepted. Deliveries must be made within 24 hours of the delivery time specified by King County. King County will place the order a minimum of forty-eight (48) hours in advance.

The Vendor will supply documentation of the liquid polymer poundage delivered by supplying the heavy load weight slip and after the product is delivered, a light load weight slip (weighing the truck after the delivery is made). The vendor shall fax the copy of light load weight slip with in two (2) days after the polymer delivery to South Treatment Plant at 206-684-2448, attn: Scott Drennen. King County will be billed according to the difference of these two weights.

1-6 Polymer Evaluation Formula

The Polymer Evaluation Formula will consist of the following factors

- A. Polymer Dosage Cost Factor
- B. Dewatering Recovery Cost Factor
- C. Polymer Handling Equipment Cost Factor (1)
- D. Biosolids Haul/Application Cost Factor

Laboratory results from each qualifying trial run at 240 GPM will be inserted into the following formulas. The polymer dosage which produces the lowest overall cost will be used for bid evaluation purposes.

A.	Polymer Dosage Cost Factor: [(16,000 DT/YR) * (X lbs polymer/DT- feed) * (M \$/lb polymer)]	_	
В.	Dewatering Recovery Cost Factor	- <u> </u>	
	[{(16,000 DT/YR) / (Y/100)} - (16,000 DT/YR)] * (X lbs polymer/DT-fe (M \$/lb Polymer)]	ea)" =	
C.	Polymer Handling Equipment Cost Factor: (E \$)	=	
D.	Biosolids Haul/Application Cost Factor: [{(16,000 DT/YR) / (Z /100)}]* (H \$/WT)	=	

Where: M = Polymer Price per Bid \$/LB neat

X = Polymer Dosage in lbs neat per dry ton fed to the centrifuge

Y = Solids Recovery in percent =

[Cake solids, %TS * (Feed solids %TS – Centrate %TSS)] / [Feed solids, %TS *(Cake solids %TS- Centrate%TSS)]

Z = Cake Solids in percent

E = Annual Handling Equipment Cost (1)

H = Biosolids Haul/Application Cost = \$33.00/wet ton TOTAL POLYMER COST (A+B+C+D)

(1) The Vendor will be responsible for all costs associated with additional equipment or modifications to piping systems necessitated by a change in polymer type.

1-7 Bench Testing

Bench testing must be scheduled by calling Scott Drennen, South Plant's Dewatering Lead Operator, Monday through Friday, at 206-684-2461 to check on availability of bench space. The last day for scheduling bench testing is July 29, 2006.

1-8 Trial Format

1-8.1 Polymer Products

Vendors will be limited to four (4) polymers for pre-trial and three (3) polymers for final testing. If pre-trial testing of a polymer results in undesirable slurrying of the cake or excessive foaming in the centrate, that polymer will be disqualified from final testing. Dry polymer for trials will be packaged in 55 – lb. bags. Liquid polymer for pre-trials will be packaged in 55-gal drums or 2500lb totes. Liquid polymer for the final trials will be packaged in 2500 lb totes. Disposal of all containers and unused polymer will be the responsibility of the vendor as noted in Section 1-4.

1-8.2 Dewatering Parameters and Information

Dewatering trials with the trial polymers will be conducted on the same Andritz D7LL unit – Centrifuge 3. If this unit is not available, trials will be postponed until the unit becomes available. Trials with test polymer will be scheduled on Tuesdays, Wednesdays and Thursdays. During the trials, the control polymer (incumbent) will be run on either Centrifuges 1 or 2 and the test polymer will be run on Centrifuge #3. Centrifuge #3 may be operated with the incumbent polymer Mondays and Fridays for additional comparison.

King County reserves the right to limit the number of representatives participating in the trial to two per vendor.

Digested Sludge Feed throughput: The trial will be conducted at a feed rate of 240 gpm.

<u>Centrate Weir Setting</u>: The centrate weir setting will remain the same for all the test polymers and the control polymer trials.

<u>Centrifuge Operating Curve Parameters</u>: The torque, bowl speed, and relative speed for the centrifuges are programmed into the D7LL unit controller (plc). The centrifuge can be operated either in torque or relative speed control. In normal daily operation, the relative speed and polymer dose are set so that the conditions to meet 94% capture are met. After the polymer dose and relative speed are set, the machine is placed in torque control and the relative speed is allowed to vary.

At the beginning of each test on a trial polymer, plant staff will determine a minimum polymer dose and the relative speed to meet the 94% capture requirements and to produce a dewatered cake. The capture requirement of 94% recovery can be observed as a float of one (1) increment or less and a clarity of four (4) or better on a the wedge test, or any test that

correlated with a total suspended solids value of less than 2000 gpm. After the relative speed and minimum polymer dose have been set, the relative speed will remain constant for the rest of the test on each trial polymer.

During the each test, plant staff will adjust the centrifuge with the incumbent polymer meet the 94% capture requirement.

Recordings of the relative speed, torque and polymer dose on the test and incumbent polymer will be made at each sampling event. (see1-8.3).

<u>Blending and mixing</u> Polymer blending and mixing with additives will not be allowed in the trials. Blending of two different polymer products before batching during the trials is not permitted during any phase of the trial.

<u>Polymer solutions</u>: Polymer solution concentration needs to be determined based on the limitations of the existing polymer feed system. Mixing of polymer too dilute to obtain sufficient polymer feed to the centrifuge will result in the disqualification of the polymer product. The polymer feed pump to be used in the trials is capable of pumping 10 to 60 gpm. Mix age tank volume is 6,000 gallons (total capacity is 7,200 gallons). The vendor has a chance to determine the appropriate batch concentration during the pre-trial testing. The vendor will not be allowed to change the concentration in the middle of a final trial.

<u>Dilution water</u>: Polymer post dilution water will not be allowed.

<u>Polymer Points of application</u>: There will be multiple injection points available. The vendor has the option of choosing polymer injection into the centrifuge, or directly into the sludge-polymer in-line mixer, or upstream of the polymer mixer and downstream of the sludge feed pump. If the vendor chooses the in-line mixer, the mixer speed will be set at a rate determined during the pre-trials for that particular product and will not be changed during the final trial of that product. The control product will be run with the mixer at a pre-determined speed during the final trial.

Minimum qualifying recovery: A minimum solids recovery set point for qualification is **94** percent. Solids recovery is calculated as shown in Section 1-6.

Minimum qualifying cake TS: A minimum qualifying cake total solids (TS) set point for qualification is **21.5** percent.

1-8.3 Procedures:

Pre-trials:

The purpose of the pre-trial is to determine appropriate polymer-biosolids mixing conditions and the starting dosing point for final trials. Each vendor is allowed to test four (4) products. Each vendor will be given one working day per product. During the pre-trials, the vendor is allowed to make changes to the polymer rate, polymer injection point and Sharpe mixer speed. Sample collection will include feed, cake, centrate and polymer at the beginning, the middle and the end of the pre-trial for each product.

Final Trials:

Each polymer product will be evaluated based on recovery performance and dewatered cake dryness. A minimum of eight (8) discrete polymer dose rates will be established at the test feed rate for a minimum of **45** minutes at each set point. Each consecutive set point will be at least one (1) lb (active)/DT apart in terms of polymer dosage. At least one (1) dose point shall be between 34.5 and 35.5 lb (active)/dry ton fed.

Only King County staff will adjust the polymer dose. The Vendor will indicate the desired starting polymer dose point. The speed on the in-line mixer, if vendor chooses to use it, will be set at the rate as determined from the pre-trial testing of that specific product and will not be altered for the rest of the test.

Flow data will also be gathered on feed and polymer dose at each of the eight distinct points. Feed, Centrate, Cake and Polymer samples will be collected at each point.

During each test, the polymer dose on the centrifuge running the incumbent polymer will be adjusted so that there are at least four (4) discrete polymer dose rates between 30 and 40 lb (active)/DT. Flow data and samples will be collected for each distinct point during for the centrifuge running the incumbent polymer.

1-8.4 Evaluation

All cake and polymer samples will be analyzed for total solids in King County's Process Lab at South Plant. All centrate samples will be analyzed for Total Suspended Solids in the same Lab. A dosing point in the sample set, which meets or exceeds both recovery and dewatered biosolids dryness, established minimums (94% for recovery and 21.5% for cake) would be considered a qualifying point. Each dosing point will be one (1) lb(active)/DT apart from the previous dosing point. A product will qualify for bidding if at least four (4) consecutive qualifying points are obtained during the trial. Averages of cake TS, solids recovery and dosage data for the four (4) lowest qualifying points will be used in bid evaluation formula. The four lowest qualifying points are the four lowest polymer doses that met the established minimums for cake and recovery. For each trial polymer, the total costs described in 1-6 will also be calculated for the incumbent polymer.

1-9 Technical Support

Technical support shall be provided from the vendor, which will include but not limited to the following subject areas at no cost to King County.

Process Optimization

The vendor shall assist when requested in the evaluation of polymer injection points, process control tools or strategies; polymer applied concentration, process equipment set points or polymer type.

Vendors will be expected to visit these dewatering facilities at least once per quarter to assist with process optimization and perform bench tests. This testing will assist King County and the vendors as to the suitability of the range of products, recognizing that variations in the feed sludge to the dewatering facility are likely to occur. If more than two site visits are missed, King County reserves the right to terminate the Contract. Quarterly visits will be scheduled with South Plant staff to assure plant staff are available to work with the Vendor during the visit.

<u>Neat Product Analysis</u> - the vendor shall supply results for total solids, viscosity (when applicable) in centipoise, and chemical composition, and percent active for the polymer being used. .

Toxicity Issues

Following a written request from King County, the vendor shall assist in conducting a scientific literature search for information including topics such as but not limited to: polymer degradation in the environment, impact of polymer on digestion. The information shall be completed within 10 working days after receiving request.

Vendor Support

The vendor or vendor representative shall be available within two (2) hours of notification by phone or beeper for consultation, problem solving or inquires.

1-10 Polymer Trial Schedule

Bench Testing: July 7 – July 21

Pre-trial Testing: July 21 – August 18

Invitation to Bid will be issued by: August 31, 2006

SPECIFICATION SHEET

(To be filled out by polymer supplier)

These specifications constitute the Specification of the product being bid.

All <u>test methods and procedures</u> used to determine Specifications must be furnished with bid.**

Pricing included on this page will be used as per Section 1-6 Polymer Evaluation Formula and is for Evaluation purposes only. Actual request for bid prices will be contained in the Invitation to Bid.

Polymer Supplier Polymer Trade Name Polymer Type Price per Pound Active Price per Pound* *(From polymer evaluation formula sheer	t)	
Completed for All Products:	Units to be	
	reported in	Specification
Cationicity**	%	
UL Viscosity**	centipoise	
Minimum Active Solids**	Wt %	
Residual Acrylamide**	%	
Maximum Inert Solids**	Wt %	
Viscosity Range** 0.25% sol. at 25 degrees centigrade	cps	
0.5 % Solution pH**	None	
For Dry Products		
Dry Content**	Wt %	
On 10 mesh**	Wt %	
Through 100 mesh**	Wt %	
For Neat Liquid Polymers		
Specific Gravity	none	
Percent Active Solids**	%	
Freezing Point**	Fahrenheit	
Minimum Storage Life in days: Dry** 0.5 % Solution** 0.25 % Solution** 0.1 % Solution** Neat Liquid**		

Bid Opening Label

Complete the form below (or a reasonable facsimile thereof) and affix to the exterior lower left hand corner of the submission package.

